



Maine Department of Transportation Transportation Research Division



Technical Report

*Evaluation of a Radar Activated Speed Warning Sign
for School Zone Speed Control
January 2004*

Transportation Research Division

Evaluation of a Radar Activated Speed Warning Sign for School Zone Speed Control

The average speed of a sample of vehicles traveling through the school zone was reduced by 2 to 3 miles per hour when the radar-activated speed sign was displayed during school hours. In one location the number of vehicles exceeding the 15 mph schoolzone speed limit was reduced by 20%.

Introduction

During the fall of 2003, the Maine Department of Transportation tested a radar-activated speed warning sign at two different locations in different towns near elementary schools. The sign was manufactured by 3M and was loaned to MaineDOT for testing purposes.

The sign display consisted of two parts; an LED speed display which was controlled by an on-board radar unit and controller cabinet; and a static sign with “Your Speed” printed on it. Existing traffic signs at these locations consisted of standard school zone signs as well as yellow beacons programmed to flash during morning and afternoon hours when school buses and pedestrians are present. The posted speed is 35 mph during regular hours when children are not arriving or departing school.



Test Locations

Two different locations were selected for the tests. The locations for this test were chosen based in part on the interest of local officials to try this technology. Input of local officials in this decision was important due to the fact that daily cycling, maintenance, and monitoring of the unit was a local responsibility. MaineDOT arranged to use the sign on a trial basis loan from 3M Corporation. Both state and local officials had expressed concern about vehicle speeds at these locations.



Data Collection

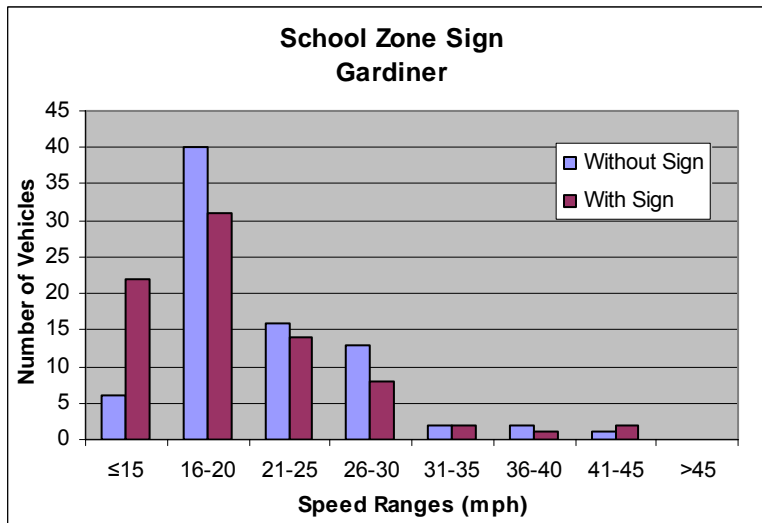
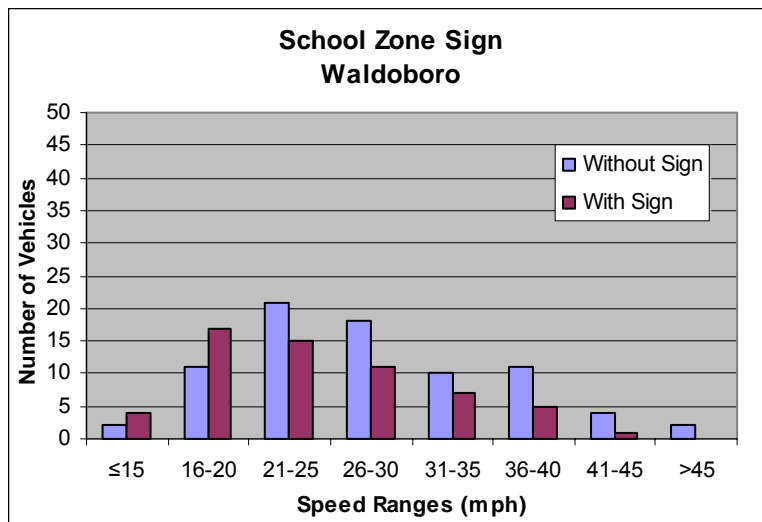
The testing protocol was to observe vehicles when school was letting out during time when children were

departing from school in the afternoon. Due to travel considerations no data was gathered during the early morning commuting period. So it is not clear if similar speeds would be observed in the morning.

Results

The data is summarized in the following table.

Waldoboro Test Site		
	Measured Speeds (mph)	
	Without Sign	With Sign
Number of vehicles sampled	79	60
Average	28.89	25.22
Median	27.46	24.03
Mode		
Minimum	10.55	14.87
Maximum	47.08	41.12
Variance	65.8685	50.1592
t statistic	2.7894	
Critical value of t	1.6561	
Confidence Level	95.00%	
Gardiner Test Site		
	Measured Speeds (mph)	
	Without Sign	With Sign
Number of vehicles sampled	80	80
Average	22.25	20.23
Median	20.62	18.87
Mode	20.62	18.32
Minimum	13.68	12.56
Maximum	41.44	41.67
Variance	34.6901	38.6697
t statistic	2.1025	
Critical value of t	1.6546	
Confidence Level	95.00%	



	Number of Vehicles Exceeding 15 mph		
	Waldoboro	Gardiner	
Without Sign	97.5%	92.5%	
With Sign	93.3%	72.5%	
Difference	4.1%	20.0%	

Photos





Conclusions

The data show that the radar activated speed signs are effective in lowering the average speeds of vehicles in school zones. The sign gives drivers feedback on their travel speed, and provides a positive incentive to slow down. Still the average speeds remain above the legal speed during times when people are departing from school; more that 70% of vehicles still exceeded the 15 mph speed limit.

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